1. **Describe the practice proposed for recognition, and list its objectives. Detail how the practice is innovative and how it promotes high student achievement.**

An Overview of The Practice:

Web design is a one semester elective course currently offered to our district's 6th grade students. Students brainstorm, plan, and develop informational and academic web pages for our middle school web site. Student web designers study the history, structure, and development of the Internet and its implications for web development. Utilized technology resources include web-authoring, graphics, sound, virtual-reality, video-editing, and video-player software; Along with printers, scanners, digital/video cameras, headsets, microphones, and the Internet. Students develop academic and technical skills as they create dynamic web pages with text, hyperlinks, graphics, animation, sound, video, and virtual reality panoramas. The instruction of interviewing, cooperative learning, researching, and writing skills ensures the creation of well-structured pages that represent and contribute to the academic and co-curricular goals of our middle school.

Web Design Course Objectives:

Our district's vision statement, established by our Board of Education, is for the district to "achieve the highest level of proficiency in the Department of Education's Core Curriculum Content Standards. This will be attained by identifying and applying the most effective instructional strategies." The following five general objectives are taken from this vision statement. Sixth grade student web designers will: 1) perform in an educational environment that makes them attractive to their selected colleges, universities, and technical schools. 2) have skills that prepare them for their desired career opportunities 3) be committed life-long learners 4) be active contributing members of the community 5) display confidence that fosters responsible independent critical thinking.

Web Design Course Innovation:

Our sixth grade web design course is innovative because it helps students explore the limitless ways that technology can help us solve real-life problems. The sixth grade web design course begins with the creation of / addition to our **middle school's virtual tour**:

Students create virtual panoramas or filmed video clips to introduce the community to our new middle school's programs and facilities and how they relate to our school's curriculum. As a virtual tour page loads, textual and verbal instructions (sound clips) instruct viewers how to explore the 180 to 360-degree view of the classroom. As the audience scrolls through the panorama and over significant objects in the classroom, they hear sound narration describing the object's importance in the development of classroom/curricular objectives. Virtual tour pages hyperlink to related team, teacher, curriculum, and extra-curricular sites within our school's web site.

As students become more experienced web designers, they may choose to develop different middle school web sites, including but not limited to the following:

- Academic content
- Student artwork
- Classroom or team web sites
- Chorus and band performance web sites (Sound clips and video of student concerts)
- School newspaper, student polls and editorials
- Technology and academic content Internet sites
- Technology projects (Excel, PowerPoint, Word etc.)
- School sports, programs, class trips, activities, and clubs

Student web designers team with teachers and other students to research and report on important, detailed, and timely information on programs and their objectives. Careful attention is given to the exchange of ideas and the integration of web sites.

Web Design Course Student Achievement:

Students develop both academic and technical skills through the implementation of hands-on and real-life technology projects. The variety of technologies and their applications ensures the use of multiple learning strategies. Every student, regardless of experience or intellectual ability, is empowered to succeed in the development of new and innovative uses of technology. As students work together to contribute to the school environment, they feel the pride and self-esteem that develops from successfully integrating their skills, creativity, and interests for authentic purposes. Although the skills and technologies implemented are immense, small class size (has not exceeded 15) ensures that students receive individual attention and the opportunity to work at their own pace.

2. **List the specific *Core Curriculum Content Standards, including the Cross-Content Workplace Readiness Standards,** addressed by the practice and describe how the practice addresses those standard(s). Provide an example to substantiate your response.**

Our web design course addresses the following **Cross-Content Workplace Readiness Standards**:

Workplace Standard 1: All students will develop career planning and workplace readiness skills. Our web design course provides a unique opportunity for students to learn skills and experience the work habits necessary for job success. Each 6th grade student is a member of a team of web designers afforded the responsibility of developing informational and academic web pages for our middle school's web site. Student web designers understand that dependability, cooperation, work ethic, and positive attitude are essential to performing his or her job as an integral member of the web design staff. Students recognize the importance of their job has as they work to inform and educate community members about our school's curriculum, programs, goals, and facilities. The web master (teacher) leads the team through the instruction and facilitation of the technical, organizational, planning, and academic skills necessary for student web designers to achieve success in their occupation.

Workplace Standard 2: All students will use information, technology, and other tools. While performing their jobs as web designers, students learn the history, structure, and growth of the Internet and its implications for successful web development. Students select and utilize appropriate technologies for each web design task. Examples of software utilized include web-authoring (FrontPage), graphics (Paint and Adobe PhotoShop), sound (Windows Sound Recorder, sound format conversion), virtual-reality (IBM HotMedia), video-editing, and video-player (Windows Media Player or RealPlayer) software. Peripherals utilized include printers, scanners, digital/video cameras, headsets, and microphones. Web designers learn how computer hardware, operating systems, application software, peripherals, local area networks and the Internet interact during web development.

Workplace Standard 3: All students will use critical thinking, decision-making, and problem-solving skills. Student web designers begin their work by systematically analyzing the effectiveness of our school's web site. An integral part of improving the efficacy of our school's web site is the recognition of its audience and our school's goals and objectives for its development. Within this context, student web designers brainstorm ideas for improving current web sites and developing new ones. Balancing school and community needs with their own abilities and interests, students implement critical thinking, decision-making, and problem solving skills in the consideration, planning, and development of brainstormed sites.

Workplace Standard 4: All students will demonstrate self-management skills. Students recognize the interdependence that exists between group members and their responsibilities in the accomplishment of both individual and group web design tasks. In order to function as successful members of the team, student web designers must implement cooperative learning, time management, organizational, and planning skills. Students recognize that the acquisition of these and other academic skills helps ensure the creation of well-structured pages that represent and contribute to the communication, academic and co-curricular goals of the school. The direct relationship between effort and accomplishment becomes evident when student work is published on the Internet as an integral part of the school's web site. The Internet provides an audience for students' work, giving their efforts purpose and meaning.

Our web design course addresses the following **Core Curriculum Content Visual and Performing Arts Standards**:

1.1 All students will acquire knowledge and skills that increase aesthetic awareness in visual arts.
1.2 All students will refine perceptual, physical, and technical skills through visual arts.
1.3 All students will utilize arts elements and arts media to produce artistic products and performances.
1.4 All students will demonstrate knowledge of the process of critique.
1.6 All students will develop design skills for planning the form and function of space, structures, objects, sound and events.

Web designers utilize various design methods in planning the form, function, structure, and navigation of a web site. Examples of utilized visuals that help improve the effectiveness of school web sites include graphics (banners, backgrounds, buttons, clipart, digital pictures, thumbnails, scanned work, animation), virtual reality panoramas, video clips, page transitions, and marquees.

Web designers learn to recognize the effect that visual forms can have in the implementation of the goals and objectives of a web site. Students consider the web site's message and purpose when selecting and

editing visuals within a coordinated and consistent graphical theme. Each web designer finds a balance between their personal style and courtesy for audience readability.

In planning a site's visual theme and structure, student web designers must also learn how to balance aesthetic needs with technical limitations (i.e. download time). Various methods are utilized to decrease page download time, including low-resolution images, thumbnails, compressed graphic formats, and graphic format types. All of these visual effects must be carefully integrated with the text, sound, and hyperlinks that contribute to a web site's structure and content.

3. **Describe the educational needs of students that the practice addresses. Document the assessment measures used to determine the extent to which the objectives of the practice have been met. Provide assessments and data to show how the practice met these needs.**

As described in application question one, our district's vision statement identifies the necessity of student proficiency in the N.J. Department of Education's Core Curriculum Content Standards. Our web design course's objectives are consistent with the five district objectives cited in the district's vision statement. These objectives shall be attained through the identification and application of effective instructional strategies. Several assessment tools are used within our classroom to determine the extent to which these course objectives have been met.

Students and teachers perform ongoing assessments throughout the web design process. Students begin this evaluation by systematically assessing the current function, strengths, weaknesses, and needs of the school web site. Students use concept-webbing techniques to brainstorm ideas for the improvement of our school's web site. Once project ideas are created, students use graphic organizers to plan the structure and content of a web site. Before the web site is created, students and teachers collaboratively critique ideas and offer constructive criticism and ideas for improvement.

Technological skills and concepts are taught as needed to develop a student web site. Students are also instructed in their web site's interaction with other technologies; examples of technologies range from the computer's hardware and software to the local area network and wider World Wide Web. Students are quizzed and tested on their understanding of these important concepts.

Each student considers himself or herself more than a mere student; each is a member of a team of student web designers with the ability to evaluate themselves and others. Students use one of six web design rubrics to evaluate themselves in various criteria areas at the novice, apprentice, practitioner, or expert levels. Received at the beginning of a web design task, rubrics guide students throughout the web design process. Rubrics can be downloaded from the district's curriculum web site and hyperlinks to this web site are available from the program leader's web site.

Rubric Purpose	**Criteria evaluated at each of the following four levels: Novice, Apprentice, Practitioner, or Expert**
Cooperative Learning	Brainstorming, responsibility, self management, staying on task, finished product
Web site content	Conveying purpose, organization, message, style, effect, citation of sources)
Visuals	Download time, effect, editing, sources, themes
Virtual Panoramas	Grammar, page layout, process, content, panorama navigation, web graphics
Web page design	Grammar, page layout, process, content, text, graphics, multimedia, navigation
Web site design	

These rubrics are detailed and clearly set expectations of students throughout the process. All students have been able to perform at the apprentice level or higher and traditionally 90% of students perform at the practitioner level or higher. The success of the program can in large part be contributed to the motivational nature of the course. Students perform well in a hands-on approach, in which they can actually see and observe the results of their efforts.

To further help guide students as they design web pages, students follow how-to sheets, checklists, and manual directions. Students receive additional feedback on their work from administrators, teachers, students, parents, and community members that visit their web sites. Hit counters and surveys provide additional information about the effectiveness of our school's web site.

The students and teachers recognize that both our web site and course objectives are a work in progress. Continuous re-evaluation is necessary to meet changes in technology and our school's needs.

4. **Describe how you would replicate the practice in another school and/or district.**

Although several technologies were utilized in the development of this program, the vast majority of objectives of a web design program can be accomplished with a minimal amount of technology. A school replicating this practice should purchase web-authoring software and Internet access for each classroom computer. At least one digital camera, headset and microphone are also necessary. Basic graphics (Paint) and simple sound editing software (Widows Sound Recorder) is usually included with a PC's computer's operating system (Windows 95/98/2000). The virtual reality[1] and video player software[2] can currently be downloaded for free on the Internet. Although this program was developed using PC's, Apple computers can be equally effective in the development of a web design program.

Although this program is written as a comprehensive web design course, content-area teachers can choose to implement one or more of the web design projects described. Content-area teachers should consider working with their district's technology and media specialists to help gather information and technology resources.

Districts replicating this practice can also find helpful resources for the program's implementation on our middle school's web site. Our school's web address is written on the first page of this application near the school's street address. The student web pages are directly accessible from our school's home page and are a significant part of our school web site. The six rubrics described in application question number three are downloadable in M.S. Word format off of the school district's curriculum web site.

In addition to the 6th grade web design course, the program leader teaches these web design techniques to teachers throughout our district during after school in-service courses. Step-by-step directions for the creation of the virtual panoramas are currently downloadable (in PowerPoint format) off our middle school's virtual panorama web site. The program leader created a 19-page manual on web design techniques using M.S. FrontPage. This resource for teacher and student web designers was converted to HTML and can be viewed as a web site within the program leader's classroom web site. An example of the manual's format follows:

Hyperlinking in FrontPage 98		
Topic	**Directions**	**Special Notes**
To Page in Web	Select text or graphic; ***Insert***; Hyperlink; click on file name; ok	**A hyperlink from an image causes a border around an image. Get rid of it**- right click on image; ***Image properties***; ***Appearance***; border to zero
To Page on Internet	Select text or graphic; ***Insert; Hyperlink***; type or paste in URL or browse with ***Web browser button***; ***Ok***	
To An Email Account	Select text or graphic; ***Insert***; ***Hyperlink***; ***Email link button***; type email address; ***Ok; Ok***	Email link button is third to right of URL box

How-to sheets and web pages on the following topics are also currently available off of the program leader's classroom web site:

- Including student Microsoft Office documents on the Internet
- Web-authoring Internet resource sites
- Adobe PhotoShop
- Voice narration with Windows Sound Recorder
- Inspiration (webbing and concept mapping software)
- Scanner Directions with Microsoft Photo Editor

[1] http://www-3.ibm.com/software/net.media/business/

[2] http://www.microsoft.com/windows/windowsmedia/download/default.asp